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Original article

Evaluation of a Pediatric Resident Skills-Based Screening, Brief Intervention and Referral to Treatment (SBIRT) Curriculum for Substance Use

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A B S T R A C T

Purpose: To evaluate a screening, brief intervention and referral to treatment curriculum for alcohol and other substance use developed, implemented and integrated into a pediatric residency program.
Methods: During a 1-month adolescent medicine rotation, pediatric, and medicine/pediatric residents in an urban teaching hospital completed a 2 1/2-hour formal curriculum including a didactic lecture, a 40-minute video describing the Brief Negotiation Interview (BNI), and a skill-based session practicing the BNI and receiving individualized feedback. Access to a website with didactic material was provided. Outcome measures were pre- and post-training knowledge, BNI performance measured with a standardized patient using a validated BNI adherence scale, satisfaction with training, and adoption of BNI into clinical practice.
Results: Of the 106 residents trained, 92(87%) completed both pre- and post-test evaluations. Significant improvements were found in pre- versus post-test scores of knowledge, (20.0 [2.4 SD] vs. 24.1 [3.5 SD], $p < .001$) and BNI performance comparing pre- and post BNI adherence scale total scores, (5.14 [1.8 S.D.] vs. 11.5 [.96], $p < .001$). Residents reported high satisfaction with training, [1.4, SD .5, immediately and 1.6, SD .6, 30-days post training)with scores ranging from 1 to 5 with lower score=greater satisfaction. During the 12-month follow-up period, we received 83 responses from residents reporting a total of 129 BNIs in actual clinical settings.
Conclusions: A screening, brief intervention and referral to treatment curriculum was successfully integrated into an adolescent medicine elective in a pediatric residency program. Residents demonstrated significant improvements in knowledge and skills performing the BNI, with high satisfaction and adoption of the BNI into clinical practice.

IMPLICATIONS AND CONTRIBUTIONS

The use/abuse of alcohol and other drugs is prevalent among adolescent and young adult populations. Resident curricula need to include knowledge and skills training about screening and providing brief intervention for these issues. This study describes the implementation and evaluation of an SBIRT program for pediatric residents that includes specific training about how to perform a brief, scripted intervention, the BNI, and integrate this into clinical practice.

Adolescents and young adults continue to use alcohol and illicit substances at significantly high rates, despite dramatic declines in use rates by these populations since the early 1990's. In 2017, the Monitoring the Future Study documented that 38% of 8th, 10th, and 12th graders reported any alcohol use in the previous 12 months [1]. In 2016, 7.9% of 12–17-year olds, and 23.2% of 18–25-year olds reported past month use of any illicit substance [2].

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Marijuana is the most commonly used illicit substance among 12–17-year olds, with 6.5% reporting past month or current use [2]. Psychotherapeutics, including pain relievers, tranquilizers, stimulants, and sedatives, are the second most commonly used class of illicit substances misused, with 3.6% of 12–17-year olds and 7.3% of 18–25-year olds reporting past year misuse of prescription opioids [2]. Licit and Illicit substance use is frequently comorbid with other mental health and medical problems, and is a leading cause of mortality and morbidity among youth. For example, the role of underage alcohol use in motor vehicle crashes is well-known. In 2015, 16% of drivers ages 16–20-years, and 28% of drivers ages 21–24-years, involved in fatal crashes had blood alcohol levels >.8 % [3].

In response to this public health problem, The American Academy of Pediatrics recommends that providers routinely screen all adolescents for alcohol, nicotine, and illicit substance use [4] and has recently published a policy statement recommending the use of screening, brief intervention and referral to treatment (SBIRT) strategies during preventive care and urgent care visits [5]. Despite these recommendations, fewer than half of all pediatricians report routine screening for substance use or drinking and driving in their adolescent patients [6], and only one half of all 10th graders nationwide are routinely screened for alcohol and other substance use [7]. Lack of time, lack of training about screening and how to intervene and lack of referral sources are cited as reasons for these low levels of screening [6]. Further, only two-thirds of pediatric residency programs provide any substantive training on topics related to alcohol and substance use in adolescents and young adults [8], citing lack of administrative support, limited faculty expertise, and competing educational needs as reasons for this lack [9].

SBIRT techniques have been widely adopted, utilized, and found to be effective for the reduction of alcohol use, and there is emerging evidence that it may be helpful with other substances such as tobacco and opioids in adult populations [10,11]. The United States Preventive Services Task Force has recommended using screening and behavioral counseling and interventions for alcohol and tobacco only in adult populations, citing sufficient evidence for effectiveness with these substances, but insufficient evidence with other drugs in adults and insufficient evidence with alcohol and other licit and illicit substances in adolescents [12–15].

A number of brief screening tools have been validated for use in pediatric populations, including the two-question alcohol screener for 9–18-year olds from the National Institute of Alcoholism and Alcohol Abuse (NIAAA), the 6-item CRAFFT alcohol and drug screener, and the single frequency question for alcohol and other substances, the S2BI [16–19]. Per guidelines with these screeners, a “brief intervention” should be performed with any positive screen, and referral to treatment considered with problematic use or a suspected substance use disorder (SUD). Recommended “brief interventions” are generally based on principles of motivational interviewing [20], wherein single or multiple sessions of varying lengths of time are suggested in order to decrease the amounts of substances used or achieve abstinence. However, the descriptions of these suggested “brief interventions” generally lack detail and are vague. Without specific guidance in terms of the components that should be included in a brief intervention, it is unlikely that consistent and effective messages are delivered.

We previously reported pilot data on the development and implementation of a curriculum to teach pediatric residents skills pertaining to SBIRT such as screening, and performing the brief negotiation interview (BNI) with the use of alcohol and other drugs in the clinical setting [21]. The BNI is a manual-guided interviewing technique originally developed and validated to reduce drug and alcohol use in adult populations [22,23]. The goal of the current study is to report the implementation and evaluation of this SBIRT/BNI curriculum with a full 3-year cohort of pediatric and medicine-pediatric residents at an academic medical center. We hypothesized that it would be feasible to implement and integrate this curriculum into the standard adolescent medicine residency curriculum and that residents would improve their knowledge and skills in performing a brief intervention, specifically the BNI, and adopt SBIRT/BNI approach into their clinical practice.

Methods

Setting and participants

The study was conducted at the Adolescent Clinic in Yale-New Haven Hospital, a 1,500-bed urban teaching medical center located in New Haven, Connecticut. A high percentage (24.4%) of New Haven’s 350,000 residents live below the poverty level. The Adolescent Clinic, with approximately 2,100 visits per year, provides primary care to patients ages 12–22-years with a racial/ethnic mix of 59% African-American, 33% Latino, 5% Caucasian, and 3% Asian/other. The majority of patients are insured by Medicaid or SCHIP. The participants were all second year Pediatric residents, and third or fourth year Medicine/Pediatric residents doing their 1-month required experience in Adolescent Medicine. Full consent for participation in this study was obtained from each resident and this Project was approved by the Yale University Institutional Review Board.

SBIRT and BNI curriculum

The adaptation and implementation of the SBIRT curriculum for pediatric and medicine-pediatric residents have been previously described [21,24]. In brief, a pediatric-focused SBIRT curriculum was developed to include didactic elements relevant for adolescents and young adults, such as epidemiology of substance use, adverse consequences of substance use and misuse, criteria for SUDs, and the use of screening tools specifically developed for adolescents, such as the 6-item CRAFFT Drug and Alcohol Screener and the NIAAA 2-step alcohol screener [16,17]. Prior to the implementation of this curriculum, the residency program provided no formal training about alcohol or other substance use and misuse. Initially, the Pediatric “Core Leader” (SAR) completed a 4-hour formal “train-the-trainer” session that involved didactic information, skill-based practice with feedback from experts in the field of SBIRT and use of the BNI. Adolescent-focused cases drawn from actual patients presenting to the Adolescent Clinic with alcohol and drug use/abuse issues were developed and reviewed by the entire research team for use in the role-playing exercises. The formal 2 1/2-hour curriculum for pediatric and medicine/pediatric residents included the didactic information described, review of a 40-minute video describing the steps of the BNI, and demonstrating the incorrect and correct ways of performing the BNI using patients presenting emergently with consequences of alcohol use, and role-playing exercises using the adolescent-specific cases. The role-playing exercise involved triads of residents, with residents taking turns being the “patient”, the “provider”, and the “observer”, who used the BNI Adherence Scale (BAS) score-card to record critical actions of the BNI performed, and provide direct, individualized feedback to the resident colleague. SAR also provided direct feedback regarding the role-playing exercises.